2

3      What is claimed is:

4

5          Claim 1.  A method for modifying N-methyl-D-aspartate

6      receptor (NMDAR) interaction with non-receptor tyrosine kinase

7      Src in cells comprising the steps of:

8              (a) providing a composition including at least one Src-

9      unique domain anchoring protein inhibitor (SUDAPI); and

10             (b) administering the composition of step (a) to said

11      cells in an amount effective to achieve modification of said

12      NMDAR interaction with said non-receptor tyrosine kinase Src

13      in said cells wherein said modification ameliorates a disease

14      or condition related to NMDAR signaling.

15

16          Claim 2. The method as in claim 1 wherein said

17      composition of step (a) additionally includes a carrier

18      effective to transport said SUDAPI into said cells.

19

20          Claim 3. The method as in claim 2 wherein said carrier

21      is selected from the group consisting of HIV Tat domain

22      peptides, arginine-rich peptides, antennapedia peptides, VP22

23      herpes simplex viral peptides and lipids.

24

25          Claim 4. The method as in any one of claims 1-3 wherein

1   said cells are cells of a central nervous system (CNS).

2

3       Claim 5. The method as in any one of claims 1-3 wherein

4   said cells are cells of a peripheral nervous system.

5

6       Claim 6. A pharmaceutical composition for modifying N-

7   methyl-D-aspartate receptor (NMDAR) interaction with non-

8   receptor tyrosine kinase Src in cells comprising at least one

9   SUDAPI combined with a pharmaceutically acceptable solution

10  or carrier.

11

12      Claim 7. The pharmaceutical composition as in claim 5

13  wherein said carrier is effective to transport said SUDAPI

14  into said cells.

15

16      Claim 8. The pharmaceutical composition as in claim 7

17  wherein said carrier is selected from the group consisting of

18  HIV Tat domain peptides, arginine-rich peptides, antennapedia

19  peptides, VP22 herpes simplex viral peptides and lipids.

20

21      Claim 9. The pharmaceutical composition as in claim 6

22  wherein said cells are cells of a central nervous system

23  (CNS).

24

25      Claim 10. The pharmaceutical composition as in claim 6

wherein said cells are of a peripheral nervous system.

Claim 11. The method as in claim 1 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 12. The pharmaceutical composition as in claim 6 wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

Claim 13. A method for modifying N-methyl-D-aspartate receptor (NMDAR) interaction with non-receptor tyrosine kinase Src in cells comprising the steps of:

(a) providing a composition including TSUDAPI-1 (SEQ ID NO:2) and

(b) administering the composition of step (a) to said cells in an amount effective to achieve modification of said NMDAR interaction with non-receptor tyrosine kinase Src in said cells wherein said modification ameliorates a disease or condition related to NMDAR signaling.

Claim 14. The method as in claim 13 wherein said cells are cells of a central nervous system (CNS).

Claim 15. The method as in claim 13 wherein said cells are cells of a peripheral nervous system (PNS).

1    Claim 16. A pharmaceutical composition for modifying N-

2    methyl-D-aspartate receptor (NMDAR) interaction with non-

3    receptor tyrosine kinase Src in cells comprising TSUDAPI-1

4    (SEQ ID NO:2) combined with a pharmaceutically acceptable

5    solution.

6

7    Claim 17. The pharmaceutical composition as in claim 16

8    wherein said cells are cells of a central nervous system

9    (CNS).

10

11    Claim 18. The pharmaceutical composition as in claim 16

12    wherein said cells are cells of a peripheral nervous system

13    (PNS).

14

15    Claim 19. An isolated peptide comprising ND2.1 (SEQ ID

16    NO:7) wherein said peptide exhibits interaction with a Src

17    unique domain.

18

19    Claim 20. The isolated peptide as in claim 19 wherein

20    said interaction is anchoring Src to a NMDAR complex.

21

22    Claim 21. The isolated peptide as in claim 20 wherein

23    said anchoring permits upregulation of NMDAR activity through

24    Src.

25

1    Claim 22. A method for inhibiting non-receptor tyrosine

2    kinase Src in cells expressing non-receptor tyrosine kinase

3    Src comprising the steps of:

4    (a)providing a composition including at least one

5    SUDAPI; and

6    (b) administering the composition of step (a) to said

7    cells in an amount effective to achieve inhibition of said

8    non-receptor tyrosine kinase Src in said cells.

9

10    Claim 23. The method as in claim 22 wherein said

11    composition of step (a) additionally includes a carrier

12    effective to transport said SUDAPI into said cells.

13

14    Claim 24. The method as in claim 23 wherein said carrier

15    is selected from the group consisting of HIV Tat domain

16    peptides, arginine-rich peptides, antennapedia peptides, VP22

17    herpes simplex viral peptides and lipids.

18

19    Claim 25. The method as in any one of claims 22-24

20    wherein said cells are from a tissue selected from the group

21    consisting of peripheral nervous system tissue, central

22    nervous system tissue, heart, intestine, kidney, liver, lung,

23    pancreas, skeletal muscle, spleen, testis, bone, skin and

24    brain.

25

1    Claim 26. A pharmaceutical composition for inhibiting

2    non-receptor tyrosine kinase Src in cells expressing non-

3    receptor tyrosine kinase Src comprising at least one SUDAPI

4    combined with a pharmacological acceptable solution or

5    carrier.

6

7    Claim 27. The pharmaceutical composition as in claim 26

8    wherein said carrier is effective to transport said SUDPAI

9    into said cells.

10

11    Claim 28. The pharmaceutical composition as in claim 27

12    wherein said carrier is selected from the group consisting of

13    HIV tat domain peptides, arginine-rich peptides, antennapedia

14    peptides, VP22 herpes simplex viral peptides and lipids.

15

16    Claim 29. The pharmaceutical composition as in any one

17    of claims 26-28 wherein said cells are from a tissue selected

18    from the group consisting of peripheral nervous system

19    tissue, central nervous system tissue, heart, intestine,

20    kidney, liver, lung, pancreas, skeletal muscle, spleen,

21    testis, bone, skin and brain.

22

23    Claim 30. The method as in claim 22 wherein said SUDAPI

24    is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

25

1    Claim 31. The pharmaceutical composition as in claim 26

2    wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ

3    ID NO:2).

4

5    Claim 32. The pharmaceutical composition as in claim 7

6    wherein said cells are cells of a central nervous system

7    (CNS).

8

9    Claim 33. The pharmaceutical composition as in claim 8

10   wherein said cells are cells of a central nervous system

11   (CNS).

12

13   Claim 34. The pharmaceutical composition as in claim 7

14   wherein said cells are of a peripheral nervous system.

15

16   Claim 35. The pharmaceutical composition as in claim 8

17   wherein said cells are of a peripheral nervous system.

18

19   Claim 36. The method as in claim 2 wherein said SUDAPI

20   is SUDAPI-1 (SEQ ID NO:1).

21

22   Claim 37. The method as in claim 3 wherein said SUDAPI

23   is SUDAPI-1 (SEQ ID NO:1).

24

25

1      Claim 38. The method as in claim 4 wherein said SUDAPI

2      is SUDAPI-1 (SEQ ID NO:1).

3

4      Claim 39. The method as in claim 5 wherein said SUDAPI

5      is SUDAPI-1 (SEQ ID NO:1).

6

7      Claim 40. The pharmaceutical composition as in claim 7

8      wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

9

10     Claim 41. The pharmaceutical composition as in claim 8

11     wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

12

13     Claim 42. The pharmaceutical composition as in claim 9

14     wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

15

16     Claim 43. The pharmaceutical composition as in claim 10

17     wherein said SUDAPI is SUDAPI-1 (SEQ ID NO:1).

18

19     Claim 44. The method as in claim 23 wherein said SUDAPI

20     is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

21

22     Claim 45. The method as in claim 24 wherein said SUDAPI

23     is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

24

25     Claim 46. The method as in claim 25 wherein said SUDAPI

1    is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ ID NO:2).

2

3        Claim 47. The pharmaceutical composition as in claim 27

4    wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ

5    ID NO:2).

6

7        Claim 48. The pharmaceutical composition as in claim 28

8    wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ

9    ID NO:2).

10

11       Claim 49. The pharmaceutical composition as in claim 29

12   wherein said SUDAPI is SUDAPI-1(SEQ ID NO:1) or TSUDAPI(SEQ

13   ID NO:2).

14

15

16

17

18

19

20

21

22

23

24

25